OCO-2 Predicted Orbit Tracks – June 12, 2014

This Google Earth *.kmz file contains the predicted OCO-2 orbit tracks which are provided seasonally. In particular, the file contains the predicted orbit tracks for both the "Nadir" and "Glint" observation modes. While the file provides insight into the areas where data will be taken during the OCO-2 mission, it does not contain the specific expected observation footprints. The predicted orbit tracks are calculated every 10 seconds during times that the spacecraft is expected to be in sunlight. The orbit tracks are filtered for solar zenith angle:

- SZA ≤ 70° for Nadir tracks
- SZA ≤ 60° for Glint tracks

OCO-2 has a 16-day repeat cycle during which the instrument will make measurements primarily in one observation mode. The instrument will then alternate between 16-day nadir and 16-day glint observation cycles.

The file contains tracks for:

- Fall Glint (Red)
- Winter Glint (Gold)
- Spring Glint (Green)
- Summer Glint (Blue)
- All Four Season Nadir (Cyan)

Note that the seasonal variability of the nadir orbit tracks lie mainly in how far they extend toward the poles.

OCO-2 also can make special observations in what is called "Target" mode. Target mode observations can be made once per day by OCO-2 and there is a list of 19 potential target locations that can be observed (see table below). The kmz file contains locations for the potential target observations (nearly all are TCCON sites). The list in the kmz file, "TCCON Station/OCO-2 Target Locations", includes a few TCCON sites that are not currently on the list for potential target observations.

The pre-launch version of the OCO-2 Data User's Guide provides a starting point for information on the OCO-2 instrument and data. The document is available at the JPL Virtual Science Data Environment: co2.jpl.nasa.gov

Table 1: Current List of Potential OCO-2 Target Observations

Name	Latitude (Deg)	Lonitude (Deg)	Altitude (km)
Park Falls, WI	45.9448	-90.2725	0.4740
SGP ARM Site, Lamont OK	36.6039	-97.4856	0.3179
ARM TWP - Darwin, Aus	-12.375	130.9167	0.0049
Lauder, NZ	-45.039	169.682	0.3633
Bialystok, Poland	53.217	23.0126	0.1426
Orleans, France	47.965	2.1125	0.1308
Tsukuba, Japan	36.0513	140.1215	0.0277
Wollongong, Aus	-34.4061	150.8793	0.0238
Eureka, Canada	80.0533	-86.4165	0.1433
Bremen, Germany	53.1037	8.8495	0.0040
Izana, Tenerife, Spain	28.297	-16.5180	2.2317
Ascension Island	-7.9696	-14.3937	0.0735
Sodankyla, Finland	67.368	26.633	0.18
Pasadena, CA	34.625	-118.1269	0.231
Karlsruhe, Germany	49.100	8.4380	0.11
Reunion Island	-20.901	55.485	0.078
Dryden FRC, CA	34.958	-117.882	0.695
Manaus, Brazil	-3.2133	-60.5983	0.04